Brownian Motion with rpgm Package

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Load Packages

rpmg is for creating realizations of Brownian Motion and xts for working with time series

```
library(rpgm)
library(xts)
```

Create Realizations

Note that the values of mean and standard deviation refer to the values for the entire realization and not for a 'step in the white noise'.

```
#Numeber of realizations
n = 5
#Number of steps
m = 100
#Starting Value
b = 1
#Mean of ENTIRE realization
mean = 1
#Standard deviation of ENTIRE realization
r = .5

#Calculate Realizations with rbrownian function
Realizations= rbrownian(n, m, b0 = b, mu = mean, sd = r )

#Convert to data frame
Realizations = as.data.frame(t(Realizations))

#Create vector of Dates
dates <- seq(as.Date("2016-01-01"), length = m +1, by = "days")

#Create time series object of realizations
Brownian = xts(x = Realizations, order.by = dates)
```

Plot Using xts.plot Funtion